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ABSTRACT

This document, by the director of the National Assessment of Vocational Education, has the following purposes: (1) to explain proposed amendments to the Carl D. Perkins Vocational Education Act; to relate any of the proposed changes to such issues as vocational teacher education, graduate education, and research on vocational education; and to point out any contributions to the proposed new policy that were the result of the National Assessment of Vocational Education; (2) to point out some of the implications of the Carnegie Corporation's National Board for Professional Teaching Standards for vocational teacher education and for research on vocational education; and (3) to discuss the idea of the federal government working with all state governors to set national goals for education. The first section explains the proposed federal legislation's impact on secondary vocational education, pointing out that it dramatically alters the structure of funding at that level. The second section addresses the proposed legislation's changes in postsecondary vocational education funding and draws attention to the fact that these changes represent a first-time recognition by Congress that the problems of postsecondary vocational education are different from those at the secondary level and that they require different solutions. The third and fourth sections discuss respectively the National Board of Professional Teaching Standards and the issue of national goal setting and performance accountability in education. (CML)

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Presentation by

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to the

American Vocational Education Research Association
University Council on Vocational Education

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Annual Convention of the
American Vocational Education Association

First, I would like to thank you for the opportunity to speak with you today about the National Assessment of Vocational Education and to preview some of the important changes in federal policy that are coming in the new legislation that is about to be passed by Congress. I will also try to relate these changes and what we said in the National Assessment to issues of vocational teacher education, graduate education, and research on vocational education. I would like to indicate where I think some of the research that we conducted in the National Assessment contributed to the new policy that has been formulated by Congress and where it did not.

The effects of the new legislation will ultimately depend on how the wording and intent of Congress are interpreted by those who are responsible for implementing the new law. The principal actors involved obviously include the federal office of vocational education (and the rest of the Department of Education), the states, and, most important, vocational teachers and administra-

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tors at the local level. Whether federal law makes a difference or not ultimately depends upon the responses of vocational teachers and administrators at the local level. However, their responses will be conditioned by the cues, direct assistance, and regulatory guidance they receive from state and federal leaders as to what the new law means and how it can be translated into action. Vocational policymakers would be well served, I think, to consider the new law with some care and implement it accordingly.

A second topic that I would like to raise is some implications of the new National Board for Professional Teaching Standards for vocational teacher education, and, as it turns out, research on vocational education. As you know, the Board is the process of developing procedures for certifying outstanding teachers and setting standards that should help to move along the process of professionalizing the practice of teaching in the schools. The Board itself is composed of teachers and other public figures. Among the members of the Board there unfortunately do not appear to be many individuals with a background in vocational education--at least none that is evident from their listed affiliations. The main exception, if my memory serves me correctly, is Mary Futrell, who was once a vocational teacher.

A third area that I would like to discuss is the President's idea of working with the governors of the fifty states to set national goals for education. Setting national goals could help to sustain public support for educational reform and set priorities for change. One can imagine the appearance of a regular national "report card" every so often to let us know how well we are doing and what remains to be done. I recall that not so long ago the wisdom of establishing a Department of Education at the cabinet level was a controversial issue. Here we are barely 12 years later talking about setting national goals for education. These and other such trends in education are likely to be with us for

some time, because of the growing importance of economic performance to our national welfare, and of education to the performance of the economy. The dramatic changes occurring now in Europe can only further heighten these new realities.

THE NEW FEDERAL LAW ON VOCATIONAL EDUCATION AND SECONDARY VOCATIONAL EDUCATION

The changes in federal policy on vocational education contained in the new proposed amendments to the Carl D. Perkins Act are substantial. This new legislation could well be seen in retrospect, several years from now, as having culminated the transformation of the federal role in vocational education that began with the landmark Vocational Education Act of 1963. The most important steps in the legislation since then were the amendments of 1968 and 1976, and the Perkins Act of 1984 itself.

The single most important change in the new legislation for vocational education at the secondary level is the merging of the two federal goals of program improvement and expanding the access of special populations to quality programs into one program within the Basic Grant, having a combined goal of improving the quality of vocational instruction and support services in the schools where the needs for improvement are the greatest. In the Perkins Act, these goals were separate and the funds for accomplishing them flowed to largely different schools through different funding mechanisms.

The new legislation essentially casts the federal role in vocational education at the secondary level into the mold of federal policy in other areas of education. In a sense, the new policy is an inevitable result of the maturing of vocational education and federal policy on it. Federal resources will no longer be intended primarily to support the open-ended expansion of vocational education but rather the targeted improvement of programs

in the local districts and schools where the needs for improvement are the greatest. The proxy chosen by the Congress for determining these needs is the economic level of the communities in which the districts are located. Resources will be distributed among school districts in both the House and Senate bills according to the same formula used in the Chapter I Compensatory Education program. The basic change was first made by the House and the Senate followed suit.

The National Assessment of Vocational Education found empirical evidence that the needs for improving vocational programs are substantial in educationally and economically poor schools. Using national data from the High School and Beyond Survey, we found that schools in the bottom 10 percent of average family income and academic ability of the students enrolled: (a) were 40 percent less likely than students in schools at the 75 percentile of the ranking to be able to attend an area vocational school, (b) offered vocational education in a third fewer program areas, such as marketing or technical and communications, and (c) offered less than half of the number of advanced level courses in a sequence of two or more occupationally specific courses. While measures such as these do not tap all that may be meant by offering quality vocational education, they certainly do reflect some dimensions of the term and are large. Such issues of the relationship between the quality of vocational education and resources should taken up by others in research on vocational education, using various sources of data in differing ways.

In certain respects, the new policy is also the logical consequence of the dramatic success and expansion of vocational education into the secondary schools that has occurred in this country over the past fifty years or so. In fact, this expansion may have occurred mostly in the past two decades or so since the passage of the 1963 Act. In the National Assessment we found that, today, over 97 percent of the students currently graduating

from high school take some vocational education, even if only one course. The average amount of vocational education taken by all students is about 20 percent of their high school program. Even students planning to obtain a baccalaureate degree take 15 percent of their coursework in vocational education.

The most astounding statistic to me is that vocational education is the largest, single subject taken by students in American comprehensive, public high schools. The figures are that the average student who graduates takes 4.21 credits of vocational education and 4.02 credits of English. The reason this is astounding to me is that most states and school districts require at least three and usually four full years of English, whereas vocational education is an elective. Students evidently like vocational education.

The priority in the new federal legislation on improving the quality of vocational programs in the schools where the needs for improvement are the greatest will place vocational education in the forefront of the major educational challenge facing this country in the years ahead. The challenge is to significantly raise the educational achievement of average and below average students, including especially students in these groups who are from special populations.

In the past we have tended to measure the quality of education in the schools by how well the best of our students are prepared academically to attend four years of college. We have also tended to measure our ability to compete economically with other nations by the state of the art of our technology and the numbers and skills of our technological elites, not to speak of our military might. Rapidly we are learning that the crucial factor determining the health of our economy is not the skills of elites but of the work force as a whole: their ability to learn on the job, their technical knowledge, their ability to solve problems,

and their capacity for taking responsibility. The economic challenge facing the country is to improve the quality of education to the point where the American work force as a whole can out-think and out-do workers in the countries with whom we are competing. This means improving education for all students and especially, as I say, the average student and the below-average student. Otherwise, our standard of living in this country will fall more than it has already fallen. This is why improving education in the poorest schools in this country is such a vital matter and an appropriate federal goal for vocational education.

One of the major improvements in vocational programs at the secondary level spelled out in the House and Senate legislation is the integration of academic and vocational instruction. This also breaks new ground in that a specific direction is set for the improvement of vocational education in the high schools. The Basic Grant has not really included any priorities for program improvement in the past. One important aspect of the priority on integrating academic and vocational instruction is that it could help to bring vocational education into the mainstream of reform and improvement in education generally. The opportunity and challenge for vocational education is to show, as stated in the Senate bill, how learning "...in the applied context of broad and specific job skills can be utilized to enhance students' academic skills and motivate them to excel in both academic and vocational coursework."

The House and Senate bills also call for using federal funds to "upgrade the level of instruction" in vocational education and "offer sequences of courses leading to a job skill." In the National Assessment, we said that the priority should be revising and rebuilding the high school vocational curriculum to (a) upgrade skill levels of jobs for which students are prepared and (b) provide the mix of broad and specific occupational skills needed by different students to get good jobs or go on for

further training and education. Quite clearly, the new federal legislation is more specific about the need for integrating academic and vocational instruction than either upgrading the job skill levels or broadening (i.e., generalizing) the occupational content of vocational education.

Finally, the priorities of the legislation include providing special population with the guidance, counseling, and other supplementary services that they need to succeed in vocational education. The Senate bill lists the kinds of special support service that should be provided to students, and includes greatly strengthened requirements for equal access to vocational education.

In sum, the model on which the legislation is built is that federal funds should be used to, first of all, improve the quality of vocational instruction through the integration of academic and vocational learning, as well as the revision of its occupational content; and, then, to make sure that educationally disadvantaged students, handicapped students, women, and limited English proficient students have all the supplementary services they need to succeed in the improved programs.

The new legislation thus dramatically alters the structure of the old Basic Grant with respect to secondary schools. Where the old basic grant was divided right down the middle with the improvement of instructional <u>programs</u> being the purpose of one part and the provision of supplementary services to special populations as <u>individuals</u> being the purpose of the other, the new legislation is unified. The goals of program improvement and supplementary services are combined into one and local recipients are given the flexibility within the overall priorities to undertake improvements and deliver services. Additional flexibility is gained in that fixed percentages of the funds received do not have to be spent on each of the special population groups. But the intent is

clear that special populations should be the primary beneficiaries of the improved programs and supplementary services and that the federal resource should be directed by local districts to schools with high concentrations of poor students.

The Senate also has proposed a minimum grant size of $25,000 in order to be sure that most recipients receive enough resources to initiate significant improvement activities. One of the most startling findings of the National Assessment was that over half of the grants to secondary school districts under the Perkins Act were less than $8,000; we recommended a minimum grant size of $100,000.

These three elements--that resources should be driven down to the local level by a formula, that one of main priorities of federal support for improving vocational education for special populations should be improving quality of vocational programs and not just providing support services to individuals, and that the funds provided should be sufficient to undertake significant change--build some of the widely discussed and basic concepts of restructuring schools into the federal legislation on vocational education.

One major uncertainty in the new legislation is the relative emphasis that should be placed by local schools on helping special populations through improving the instructional content of programs versus providing supplementary services to students. Neither the House or Senate bills now are entirely clear on this issue and probably the uncertainty will not be completely resolved in the final legislation. The priorities now are ambiguous. The advocates of supplementary services will say that what special populations need most is to receive special tutoring and other forms of assistance individually to help them succeed in the vocational programs in which they enroll. Advocates for program improvement will say that the greatest benefits for

special populations from federal funding lie in strategically upgrading the instructional content of vocational programs in which special populations are enrolled, even if this means that other students who also enroll in the same programs will benefit, too.

Where the new legislation departs the most from current trends in education generally is in the role accorded to states in the implementation of the federal law. For secondary programs, Congress clearly intends to drive most of the federal funds directly down to the local level through a clearly specified formula, leaving little room for the exercise of state leadership. The House bill would provide the states with about 5 percent or practically no discretionary resources to carry out leadership activities. The Senate has restored the level of support for state leadership activities to 20 percent of the Basic Grant but even so has spelled out the specific activities that may be conducted in some detail, including requirements that 20 percent of the state funds (or 4 percent of the Basic Grant) must be spent on certain designated women's equity activities. The Senate bill would provide the states with additional room to exercise leadership at the postsecondary level, as will be discussed below.

THE NEW FEDERAL LAW ON VOCATIONAL EDUCATION AND POSTSECONDARY EDUCATION

The second major change in the new federal legislation is the introduction of a separate program for postsecondary vocational education apart from the program for secondary vocational education. In the House legislation, this separate program consists only of a formula for distributing Basic Grant funds to postsecondary institutions that is different from the formula for the secondary level. The Senate bill goes much further. It sets a percentage of the Basic Grant funds that must be separately spent at the postsecondary level, allows the states to distribute the

funds according to either formulas they develop or proposal competitions, and establishes goals that are markedly different from the secondary level. The postsecondary program in the Senate bill would give the states a lot of discretion in how the federal funds would be used.

Congress has thus, for the first time in the federal legislation, said that the problems of postsecondary vocational education are different from secondary vocational education and require different solutions. The federal goals for postsecondary education include the support of programs in local institutions that serve special populations, that involve cooperative arrangements between business and industry, or that are strongly tied to economic development efforts within the state. Approximately one-third of the postsecondary funds must be spent on programs and services for single parents and displaced homemakers.

The creation of a separate postsecondary program requires choosing a percentage of the Basic Grant funds to be spent at the postsecondary level in comparison to the secondary level. This requirement will inevitably lead to issues of what the percentage should be and the extent to which federal policy should encourage the shift of vocational education from the secondary to the postsecondary level. The current version of the Senate legislation opens the discussion by allocating what appears to be a low percentage of the Basic Grant funds to the postsecondary level. The allocation in the Senate bill allows the states to choose a figure of between 25 and 35 percent. But, from this amount, should be subtracted the optional grants to institutions of higher education for "mentoring programs" to prepare teachers for vocational education, since undoubtedly this will include the preparation of teachers for the secondary level.

One way to decide on the allocation is to compare the total contact hours of instruction delivered at the two levels. While

we did not make any such comparisons in the final reports of the National Assessment, I would estimate from preliminary compilations we did that the number of contact hours of instruction delivered at the postsecondary level is about equal to the amount delivered at the secondary level, or a split of about 50 percent. This is considerably higher than the 25 to 35 percent of the Senate bill, suggesting that the Senate thinks federal policy should favor vocational education at the secondary level.

As one of the contractors to the National Assessment said in the his report, policy on postsecondary vocational education has been a "long time a-coming." Part of the difficulty has been that there has been so little analysis of what major problems federal policy should be addressed. Perhaps, it has not been possible to reach any agreement on what federal goals should be at the postsecondary level partly because there has been no postsecondary program requiring any consensus on goals. The wide divergence between the House bill and the Senate bill on goals for the postsecondary program is evidence of the lack of consensus. Nevertheless, there now is a program. It is just that its goals are not very clear yet.

Intensive research into the problems and prospects of postsecondary vocational education is sorely needed. The area is ripe for the next National Assessment to tackle head on. We started in the National Assessment by looking carefully at enrollments, supporting a study of the sources of institutional quality, and looking at other sources of federal aid to the sector. Much more remains to be done in order to be able to forge a federal role in vocational education at the postsecondary level that makes sense and meets real needs.

The Senate's postsecondary program also opens a door for schools of education to assist schools and postsecondary vocational institutions in the professional development of teaching staff

and recruiting new candidates from business and industry. We considered studying the demographics of the teacher work force in vocational education in the National Assessment but discarded the idea because we could not find sufficient data to accomplish the task. We explored in a preliminary way what data on high school vocational education teachers we could find in the High School and Beyond Survey and from the Educational Testing Service's National Teacher's Examination. We found that vocational teachers are largely indistinguishable from academic teachers according to all of the criteria, such as years of college education, that were available. The only major difference was that teachers in the field of trades and industry ranked significantly lower on verbal ability than teachers in other areas of vocational education. Policy-oriented studies of the knowledge and skills of vocational teachers in combination with the demographics of the vocational education teacher work force (that is, the rates at which they are currently entering and leaving the profession) could be extremely valuable for policy. Obviously, teacher preparation and the role of vocational teacher education programs in the professional development of teachers is an important issue. To my knowledge, very little policy-relevant information on the teacher work force in vocational education has in the past entered discussions of federal policy on vocational education.

Another new and truly important initiative in the postsecondary program of the Senate legislation is the program of grants to be awarded by the states to encourage the development of four-year technical preparation programs by consortia of secondary and postsecondary institutions. Only 5 percent of the Basic Grant funds is allocated to these efforts but their success is vitally important to the future of vocational education. Well conceived and thoroughly developed technical preparation programs of the kind described in the Senate bill promise simultaneously to establish clear educational paths for students to rewarding

careers in technical fields, and stimulate local economies through significantly expanding the available supply of well-trained and educated people. It is noteworthy that Senate does not speak of "advanced placement" in a postsecondary institutions for coursework taken in high school but of a "common core of required proficiency in mathematics science, communications technologies..." to be learned in an applied setting. Demonstration that the concept of applied learning can be made to work is a potential key to the future of vocational education, and an ideal way to show this is through the concept of a tech-prep program. Five percent of the Basic Grant is not large but it provides a good start toward a new and well-focused federal role in the improvement of vocational programs.

THE NATIONAL BOARD OF PROFESSIONAL STANDARDS IN TEACHING

A third area that I would like to discuss is the new National Board for Professional Teaching Standards, which is the body created by the Carnegie Corporation of New York to develop a national process for credentialling teachers for the elementary and secondary schools.

The Board has issued a report outlining its policies for development of the new teaching certificates, and is now in the process of establishing assessment procedures and standards for the first group of teaching fields. According to the current plans, certificates will be offered in approximately twenty different fields, such as early childhood education (pre-K through Grade 3), middle-grade education (Grades 4 to 9), middle-grade science education, and so forth. Five of the twenty fields have been set aside for vocational education. The first certificates will be awarded in 1993.

The effects of these Board actions will not be felt on vocational education for some time but in the long run will be profound, if

the credentials take hold. Many years ago the Carnegie Corporation supported the Flexner report on the training of doctors in medical schools. The report eventually led to major reforms in the practice of medicine and the preparation of doctors for the profession. Potentially this new National Board for Professional Standards in Teaching will have the same kinds of important consequences for the training of teachers for the elementary and secondary schools. Not to be finally included among the kinds of teachers for whom the Board offers a certificate would be harmful to vocational education.

The independent process of assessment envisaged by the Board fits well with the variety of ways in which people are recruited into vocational teaching and learn their profession. This gives vocational education a "leg up", so to speak, on the process of certification compared to other areas of education.

One of the main challenges will be deciding upon the five fields in which certificates should be offered and defining what vocational teachers in each of those fields "should know and be able to do." A cornerstone of the Board's policy is parsimony in the number fields where certificates will be offered. Developing a certificate for all of the various occupational specialties in vocational education or even some of them will not be possible. The number of fields will force the question to be asked of what the general knowledge is that comprises each of these five basic fields and distinguish them from each other. The kinds of questions raised may be similar to the kinds of questions that reformers who are attempting to generalize the vocational curriculum into a few broad areas have been asking for some time. The responses could help to provide the directions for reforming the occupational content of the secondary school vocational curriculum to parallel the integration of academic and vocational instruction. Exactly what challenges the exercise will pose to the concept of "occupationally specific vocational education" I

cannot foresee, but such challenges seem likely. Whether specific skills should be taught may not turn out to be the issue nearly as much as what specific skills have the most general value to students and therefore should be commonly taught. The next question might then be if, for many students, the vocational curriculum has been overly compartmentalized into highly specific categories of jobs.

The certification process will be developed through an extensive program of research. I am not aware of a similar research effort to test alternative methodologies and assess the validity of content behind the professional examinations that exist in any other area, including architecture, law, and engineering. The purpose of the research is to find the combination of assessment procedures that produces the best results for a reasonable expenditure of time and money. "Fair and trustworthy" results is what the Board says they are looking for. Methodologies that are being considered include essays, oral interviews, simulated classroom situations, simulated performance of other teaching tasks, portfolio review, limited observations of actual performance, and regular observation of performance in addition to conventional multiple-choice tests. Centers where the assessments will be performed will be established across the country.

The Board has said that the plan they have announced is only to "begin the conversation" that they expect to have with each of the teaching fields before arriving at procedures for awarding certificates. I seems to me that you, as professors of education, who are deeply involved in the preparation of teachers, should take them up on the offer and engage the process. Opportunities for research will exist to assist the Board in arriving at its conclusions. The essential question this research will be intended to answer for each of the teaching fields included is, "what should (vocational) teachers know and be able to do?"

NATIONAL GOAL SETTING AND PERFORMANCE ACCOUNTABILITY

Let me turn now to my last area of setting national goals in education and performance accountability.

Setting national goals for education could be one of the more important steps that we take in the years ahead to keep education in the forefront of the public mind and improve performance. But the effort will not mean much if at the same time neither the states nor local districts implement systems of performance accountability for measuring progress toward those goals. The two initiatives go hand-in-hand. Some capacity for reporting objectively on the results of education for students is necessary or the setting of goals could rapidly become a rhetorical exercise. This could in the long-run could undermine public confidence in education rather than build or reinforce it. Simultaneously, performance cannot be measured well until goals are set to determine the outcomes of education against which progress is to be measured.

The true implementation of performance accountability in federal programs as called for by the President and the governors could drastically change the nature of the relationship between the federal government and the states in education. Requirements to develop performance standards and systems of performance accountability at the state level are included in new federal legislation on vocational education. Both the House and Senate bills have a new section spelling out the standards and measures that states are to develop. The language specifies the educational outcomes that should be included and sets a timetable.

But the Congress does not seem to have as much enthusiasm for the idea of performance accountability as the governors do. This is not altogether surprising to the extent that granting states

greater flexibility in spending federal funds would be part of the bargain. One of the clear sticking points is that Congress wants to be sure that granting the states additional flexibility would not lead to a slackening of their efforts to use federal funds for expanding educational opportunities for special populations.

Prudence and careful consideration should be the watchword in moving to performance accountability for a number of other reasons as well. This is illustrated by some interesting work that was done in the National Assessment. The work indicates how the performance measures selected can have unexpected and possibly untoward side effects, if care is not taken to think through the consequences and implications for the goals of vocational education.

One of our recommendations to Congress in the National Assessment was that requirements for the development of performance indicators by the states should be accompanied by a substantial program of investigator-initiated research grants to provide the capacity for obtaining this better understanding.

Chapter II in the Final Report from the National Assessment presents a new measure of the rate at which students are placed in jobs that use the vocational training that they have received. The conventional measure of training-related placement determines job-relatedness only at the level of the occupational field in which the student majored, however many courses the student may have taken in total or however many sources the student may have taken in fields other than his or her major field. The new measure described in the Final Report is called the "Skilled Jobs Course Utilization Rate," or Skilled Jobs CUR. The Skilled Jobs CUR counts usage rates course-by-course for all courses taken by each student and only gives credit for usage to jobs obtained by students that require medium or high levels of skill--that is,

jobs that require more than three months of training. This measure has two important properties compared to the conventional measure of placements. First, it is highly sensitive to the number of vocational courses that students take, where the conventional measure counts students who take one course equally with students who take many courses. This can seriously distort the measured efficiency with which students are utilizing the skills that they obtain from vocational education. Second, the new measure is sensitive to the skill levels of jobs that students receive. The measure gives no credit for using skills learned in vocational education where the jobs obtained by students are low skilled.

A performance accountability system incorporating the Skilled Jobs CUR would create different incentives for vocational programs compared to the conventional measure of training-related placement. Under the commonly used measure of training-related placement rates, vocational programs would face incentives to expand the placement of students in low-wage, low-skilled jobs, which generally are easier to find than medium- or high-skilled jobs. Continuation of such incentives over a period of time could seriously degrade the quality of the vocational programs within a state. The Skilled Jobs CUR would, conversely, create incentives for the placement of students in medium- and high-skilled jobs. This could in the long run result in the substantial improvement and upgrading of the vocational programs within a state with respect to the kinds of jobs that students obtain. Thus, the reflexive adoption of the conventional measure of job placement in a system of performance incentives, where poor performance would have real financial implications for institutions, could lead vocational education in the wrong direction.

Use of the Skilled Jobs CUR would bring to the forefront issues of the skill levels of jobs being obtained by the graduates of

vocational programs. The issues are important and in the future should be addressed.

One general principle we recommended in the National Assessment was that systems of performance accountability will be much less likely to distort incentives in a system of vocational education if they are based on a variety of different measures of performance. Placement rates measure the economic outcomes of vocational education. Other important outcomes include the academic competencies of vocational students. These academic competencies may not be primarily the result of vocational education, but any system of performance accountability for vocational education must include the total educational achievement of the students. In addition to job skills and academic skills, vocational education can help students make decisions about what they want to do with their life; affect their attitudes toward work and other aspects of employability; and teach skills of solving problems, taking responsibility, and working in teams. A performance management system that only credited employment in a training-related job could seriously short-sell vocational education. This is what makes the development of a system of performance accountability so difficult and what presents an important agenda for research in the field of vocational education.

Investment by the federal government and the states in investigator-initiated research and demonstration activities within a framework of priorities and leadership is required to develop the broader range of improved measures of the outcomes of vocational education that is needed. Ideally, the federal Department of Education and the U.S. Office of Adult and Vocational Education would have the resources and analytical capacity to provide some of this leadership.

CONCLUSION

In closing, I would like to note that all the topics I have raised here today stem from forces external to vocational education. Vocational educators may be accustomed to such an environment, but it seems to me that the times today are especially critical for the future of vocational education. As vocational educators and members of the university community, it is vitally important for you to engage these forces and shape the future of vocational education. Vocational education cannot afford to "wait and see what happens" or, worse yet, react defensively and then attempt to forestall the kinds of changes that appear to be coming. It is vitally important, I think, to seize the high ground; take action; and, most important, find ways of working with other educators and other people to improve vocational education.

The time has come for vocational educators to engage educators of all kinds and show them what vocational education has to offer in meeting the tremendous challenge of educating all students well in this country. I am convinced from my experience with the National Assessment that vocational education in fact has much to offer. Vocational education can teach problem-solving skills and impart disciplines of resourcefulness and application that cannot be learned, or are not typically taught, in regular academic classrooms. It can expand opportunities for academic learning and provide occupational skills that students want and need because of their career interests and post-school plans. Vocational teachers also seem to be born with a care for students and a personnel interest in their individual accomplishments that would serve all of education well if it could be somehow bottled and sold.